File 351:Derwent WPI 1963-2001/UD,UM &UP=200201
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***File 351: Price changes as of 1/1/02. Please see HELP RATES 351.**
More updates in 2002. Please see HELP NEWS 351.

| Set | Items | Description |
|---|---|---|
| ?e pn=de 3932277 | | |

| Ref | Items | Index-term |
|---|---|---|
| E1 | 1 | PN=DE 3932275 |
| E2 | 1 | PN=DE 3932276 |
| E3 | 1 | *PN=DE 3932277 |
| E4 | 1 | PN=DE 3932278 |
| E5 | 1 | PN=DE 3932279 |
| E6 | 1 | PN=DE 3932281 |
| E7 | 1 | PN=DE 3932282 |
| E8 | 1 | PN=DE 3932283 |
| E9 | 1 | PN=DE 3932285 |
| E10 | 1 | PN=DE 3932287 |
| E11 | 1 | PN=DE 3932288 |
| E12 | 1 | PN=DE 3932289 |

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S1 1 PN="DE 3932277"
?t s1/9/all

**1/9/1**
DIALOG(R)File 351:Derwent WPI
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008221833 **Image available**
WPI Acc No: 1990-108834/ **199015**
XRAM Acc No: C90-047755
XRPX Acc No: N90-084218
**Micro-electronic semiconductor device with lattice adaptation - by superlattice for contact area between them and with alternative material removed where devices are made in one of materials**
Patent Assignee: MITSUBISHI DENKI KK (MITQ )
Inventor: HAYASHI K; SONODA T
Number of Countries: 002 Number of Patents: 003
Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week | |
|---|---|---|---|---|---|---|---|
| DE 3932277 | A | 19900405 | DE 3932277 | A | 19890927 | 199015 | B |
| JP 2094663 | A | 19900405 | JP 88247608 | A | 19880930 | 199020 | |
| DE 3932277 | C | 19920709 | DE 3932277 | A | 19890927 | 199228 | |

Priority Applications (No Type Date): JP 88247608 A 19880930
Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|---|---|---|---|---|---|
| DE 3932277 | C | | 9 | H01L-029/267 | |

Abstract (Basic): DE 3932277 A

In a first structure on a semiconductor substrate (1, 4) a super lattice (3) is deposited to allow depsn. of a second semiconductor (5, 6) with a different compsn. and lattice constant. The structure features areas (7) in which the substrate material has been removed and areas (4') in which the super lattice and layers above have been removed. The active devices (9,10) are pref. constructed in the areas

where only 1 of the materials remains. Where the 2 materials overlap the super lattice remains present to ensure adaptation. The substrate (1, 4) is pref. Si, the second semiconductor material is pref. GaAs (5, 6). Also claimed is a structure using a Si substrate in which an insulating layer with a suitable latticee constant, e.g. CaF2, is formed between the bulk (1) and the epitaxial layer (4). The first material is pref. a solar cell and the second material pref. forms a laser diode. Also claimed is the first structure with the addition of a layer of heat conductive material (11) coating the inside of the opening (7) etched in the substrate. Also claimed is a structure as above with, instead of the heat dissipating layer, further layers of the second semiconductor are grown epitaxially and a device is formed in them. A pref. process flow for mfr. is also claimed.

USE/ADVANTAGE - The method allows the use of semiconductor materials with different lattice constants in a combined device without incurring high mismatch related defects in the surfaces, i.e. showing 10-10 power 4 defects/cm2 instead of the 10 power 6/cm2 level currently achieved. This allows similar characteristics to be achieved in the devices as in single material devices. The structures are used for the mfr. of opto-electronic and electronic devices. (10pp Dwg.No.1d,e,f/5)

Abstract (Equivalent): DE 3932277 C

Semiconductor structure comprises a substrate (1, 4) of a first semiconductor material, an over-lattice (3) deposited on the substrate, and a semiconductor body (5, 6) of a second semiconductor material deposited on the over-lattice. The lattice constant of the second semiconductor material is different from that of the first. There is at least one relieved region (7) in the semiconductor substrate, exposing the surface of the over-lattice and at least one first semiconductor unit or device (10) in the semiconductor body above this region.

USE/ADVANTAGE - Fewer defects in the semiconductor body. It is suitable for semiconductor techniques.

(Dwg.1e/5)

Title Terms: MICRO; ELECTRONIC; SEMICONDUCTOR; DEVICE; LATTICE; ADAPT; SUPERLATTICE; CONTACT; AREA; ALTERNATIVE; MATERIAL; REMOVE; DEVICE; MADE; ONE; MATERIAL

Derwent Class: L03; U11; U12; U13; V08

International Patent Class (Main): H01L-029/267

International Patent Class (Additional): H01L-021/20; H01L-023/36; H01L-027/09; H01L-029/26; H01L-029/784; H01L-031/0304; H01L-031/04; H01S-003/19

File Segment: CPI; EPI

Manual Codes (CPI/A-N): L03-E05B; L04-C01; L04-E03B

Manual Codes (EPI/S-X): U11-C18B; U12-A01B; U12-A02A2; U12-E01; U13-D04; V08-A04A

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Sub account: STK00045PUS/STUNKEL

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$4.92 1 Type(s) in Format 9

$4.92 1 Types

$11.99 Estimated cost File351

$0.19 TELNET

$12.18 Estimated cost this search

$12.26 Estimated total session cost 0.463 DialUnits

File 345:Inpadoc/Fam.& Legal Stat 1968-2001/UD=200151

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      S1       1  PN=DE 3932277
?t s1/9/all

 1/9/1
DIALOG(R)File 345:Inpadoc/Fam.& Legal Stat
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9189266
Basic Patent (No,Kind,Date): DE 3932277 A1 900405  <No. of Patents: 003>

PATENT  FAMILY:
GERMANY (DE)
  Patent (No,Kind,Date):  DE 3932277  A1  900405
    HALBLEITEREINRICHTUNG UND VERFAHREN ZU IHRER HERSTELLUNG (German)
    Patent Assignee:  MITSUBISHI ELECTRIC CORP  (JP)
    Author (Inventor):  SONODA TAKUJI  (JP); HAYASHI KAZUO  (JP)
    Priority (No,Kind,Date):  JP 88247608  A   880930
    Applic (No,Kind,Date):  DE 3932277  A   890927
    IPC: *  H01L-029/267; H01L-021/20; H01L-023/36; H01L-029/78;
      H01L-031/04; H01S-003/19
    CA Abstract No: ; 113(14)124804M
    Derwent WPI Acc No: ; C  90-108834
    Language of Document:  German
  Patent (No,Kind,Date):  DE 3932277  C2  920709
    HALBLEITERSTRUKTUR (German)
    Patent Assignee:  MITSUBISHI ELECTRIC CORP  (JP)
    Author (Inventor):  SONODA TAKUJI  (JP); HAYASHI KAZUO  (JP)
    Priority (No,Kind,Date):  JP 88247608  A   880930
    Applic (No,Kind,Date):  DE 3932277  A   890927
    Filing Details:  DE C2 D2  Grant of a patent after examination process
    IPC: *  H01L-029/267; H01L-021/20; H01L-023/36; H01L-029/784;
      H01L-031/0304; H01S-003/19
    CA Abstract No: *  113(14)124804M
    Derwent WPI Acc No: *  C  90-108834
    JAPIO Reference No: *  140292E000122
    Language of Document:  German

GERMANY (DE)
  Legal Status (No,Type,Date,Code,Text):
    DE 3932277    P   880930  DE AA        PRIORITY (PATENT APPLICATION)
                              (PRIORITAET (PATENTANMELDUNG))
                              JP 88247608  A   880930
    DE 3932277    P   890927  DE AE        DOMESTIC APPLICATION (PATENT
                              APPLICATION)  (INLANDSANMELDUNG
                              (PATENTANMELDUNG))
                              DE 3932277  A   890927
    DE 3932277    P   900405  DE A1        LAYING OPEN FOR PUBLIC
                              INSPECTION  (OFFENLEGUNG)
    DE 3932277    P   900405  DE OP8       REQUEST FOR EXAMINATION AS TO
                              PARAGRAPH 44 PATENT LAW  (PRUEFUNGSANTRAG
                              GEM. PAR. 44 PATG. IST GESTELLT)
    DE 3932277    P   920709  DE D2        GRANT AFTER EXAMINATION
                              (PATENTERTEILUNG NACH DURCHFUEHRUNG DES
                              PRUEFUNGSVERFAHRENS)
    DE 3932277    P   930114  DE 8364      NO OPPOSITION DURING TERM OF
                              OPPOSITION  (EINSPRUCHSFRIST ABGELAUFEN OHNE
                              DASS EINSPRUCH ERHOBEN WURDE)
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DE 3932277 P 960125 DE 8320 WILLINGNESS TO GRANT LICENSES DECLARED (PARAGRAPH 23) (LIZENZBEREITSCHAFT ERKLAERT (PAR. 23))

JAPAN (JP)
Patent (No,Kind,Date): JP 2094663 A2 900405
SEMICONDUCTOR DEVICE AND MANUFACTURE THEREOF (English)
Patent Assignee: MITSUBISHI ELECTRIC CORP
Author (Inventor): SONODA TAKUJI; HAYASHI KAZUO
Priority (No,Kind,Date): JP 88247608 A 880930
Applic (No,Kind,Date): JP 88247608 A 880930
IPC: * H01L-027/095; H01L-021/20; H01S-003/18
JAPIO Reference No: ; 140292E000122
Language of Document: Japanese
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